Honors Chemistry - Nature of Science Lab 2

Stasya

1 Lab 2: Kitchen Match & Alka-Seltzer

Purpose: To observe chemical changes and note the indicators of a chemical change.

Safety: Wear goggles and an apron at all times. Follow the procedure exactly. Wash hands before leaving the lab.

Pre-Lab Questions:

1. Describe what you know happens to a match when it burns. What visual changes do you see? Do you think the mass will increase or decrease?

2. If you think the mass increases, where does this extra mass come from? If you think the mass decreases, where do you think the mass went?

3. What do you know happens to Alka-Seltzer tablets when you drop them in water?

4. Do you think the mass of the water plus Alka-Seltzer will increae, decrease, or stay the same as the change occurs? Explain why you chose your answer.

Procedure:

Part 1:

1. Place a weigh paper of plastic dish on the balance. Press the "tare" or "zero" button. This re-calibrates the reading on the balance to show zero, regardless of what mass is on the pan.
2. Place five unused matches on the weight paper. The mass displayed is the mass of only the matches. Record the results and draw a picture of the matches.
3. Carefully strike the matches one at a time, allow them to burn halfway, and then blow them out.
4. Allow the match to cool. Measure and record the mass of the burned match. Draw a picture of what the matches looks like now.
5. Wet the matches and throw them in the garbage.

Part 2:

1. Fill an empty film canister 3/4 full with water.
2. Put in a few drops of BTB until the water is blue.
3. Put half of an Alka-Seltzer tablet into the water and very quickly put the cap tightly on the film canister.
4. Quickly place the canister upright in a sink well. Stand to the side a few feet and observe changes.
5. Discuss with your lab group what you observed that indicates a chemical change.

Observations:

Write a few sentences describing what happened.

Post-Lab Questions:

1. Compare the mass of the match before it burned and after it burned. Did it increase or decrease?
2. If the mass has increased, from where did the matter come? If the mass decreased, where did the matter go?
3. What indicators of a chemical change were observed in Part 1?
4. What indicators of a chemical change were observed in Part 2?
5. What indicators of a chemical change did you not observe?
6. Give a scientific reasoning explaining why the top popped off the film canister.
7. Was the law of conservation of mass obeyed? How do you know?

Conclusion:

Write a conclusion discussing both parts of the lab. A good conclusion includes a purpose of the lab, description of what you did and what you observed, and a connection between what you saw in lab and what you learned in class.